



**DMSO**

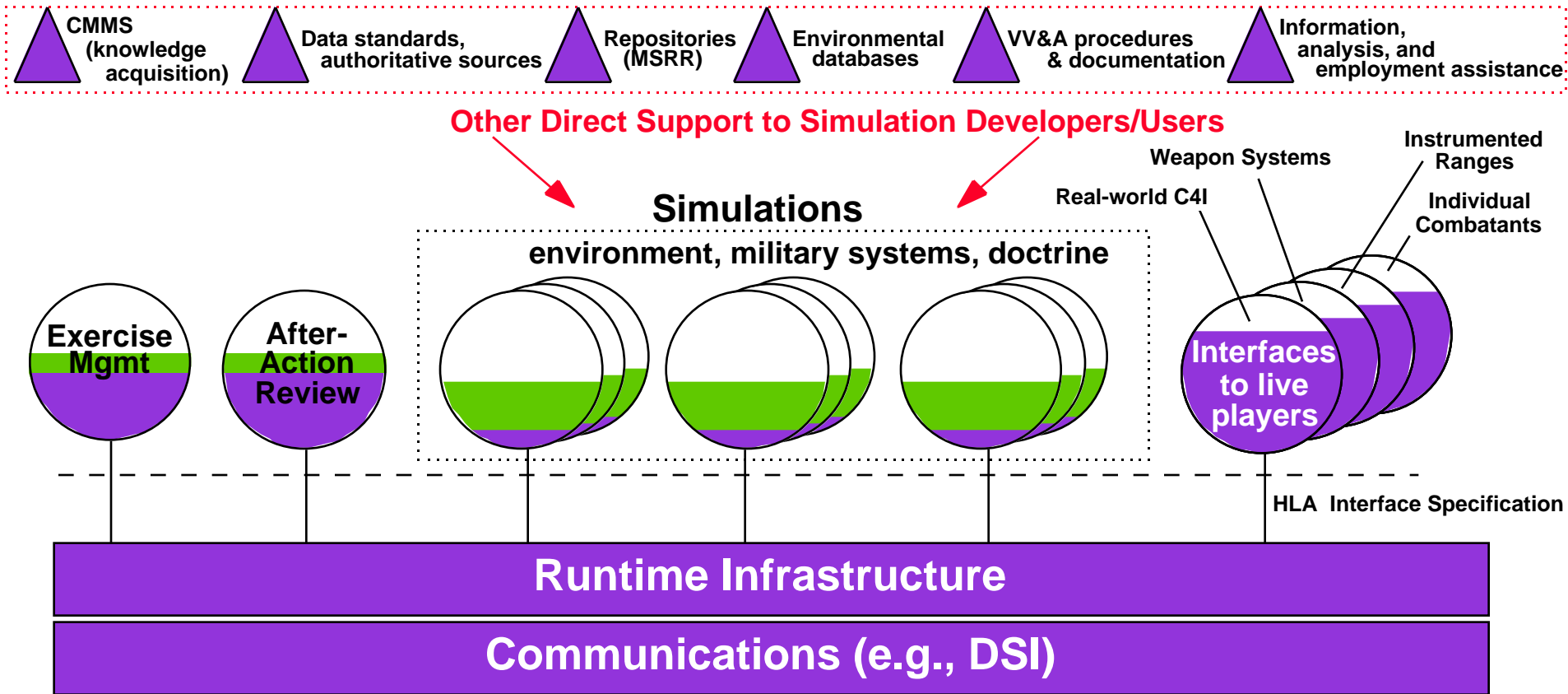
# **Modeling and Simulation Resource Repository**

**13 June 1996**

**Mr. Gary Misch  
DMSO Support Team  
(703) 824-3425  
[gmsch@msis.dmsomil](mailto:gmsch@msis.dmsomil)**



# Tomorrow's Simulations will be Built on Reusable Elements



- Key:
- Reused across all DoD simulation systems
  - Reused across a simulation domain
  - unique



## **Modeling and Simulation Resource Repository (*MSRR*) - What is it?**

- **A distributed network of resources**
- **Organized by information domains**
- **Maintained by the resource owners**
- **Linked by WWW protocols**
- **Providing a complete service infrastructure**
  - **Registration**
  - **Help Desk**
  - **“Virtual Card Catalog”**
  - **“Registered Resource Requests”**
  - **Documentation**
  - **Training**
  - **Visualization**
- **Classified and unclassified systems**



## **MSRR Goal**

- **Support pull, plug, and play through responsive, timely access to authoritative sources of:**
  - actual models and simulations
  - software (RTI, other common use products)
  - metadata and data models (including SOMs)
  - standards
  - Instance databases
  - Use and VV&A histories
  - CMMS
- **Eliminate duplication**



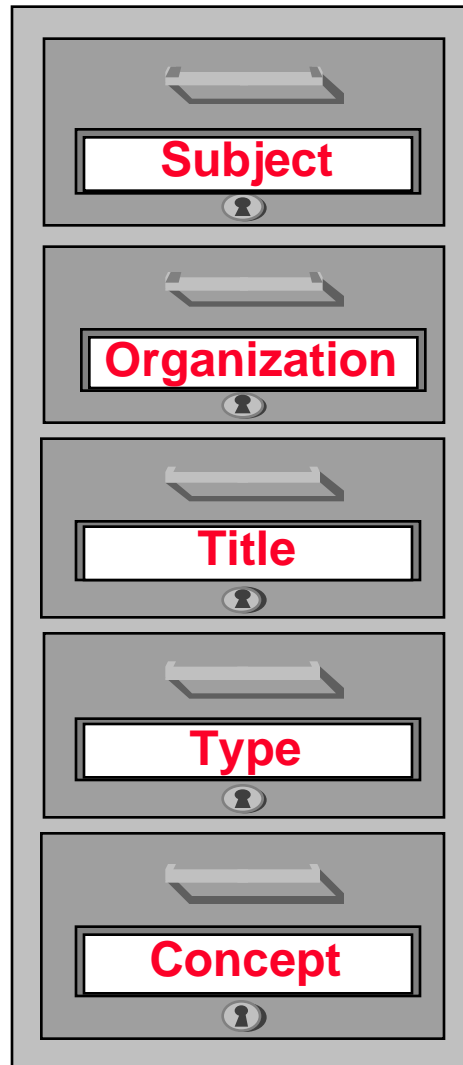
# MSRR: Organized by IDs Logically Grouping Available M&S Resources

DMSO

## VIRTUAL CARD CATALOG:

### ORGANIZED BY:

- INFORMATION DOMAINS WITH
- VIEWS THAT PROVIDE:
  - IDENTIFICATION &
  - LOCATION OF M&S RESOURCES USING:
- SEARCH ENGINES AND
- DATABASE QUERIES



## M&S RESOURCES:

- FOM/SOM LIBRARIES
- PROTOCOL CATALOG
- CMMS
- CUSTOM RESOURCE REPOSITORIES
- SPECIALIZED INSTANCE DATABASES
- REGISTRATION DATABASE
- M&S DIRECTORIES
- JADE++
- MSRR DOCUMENTATION
- FAQs
- NEWSGROUPS



# Maintenance by Resource Owners

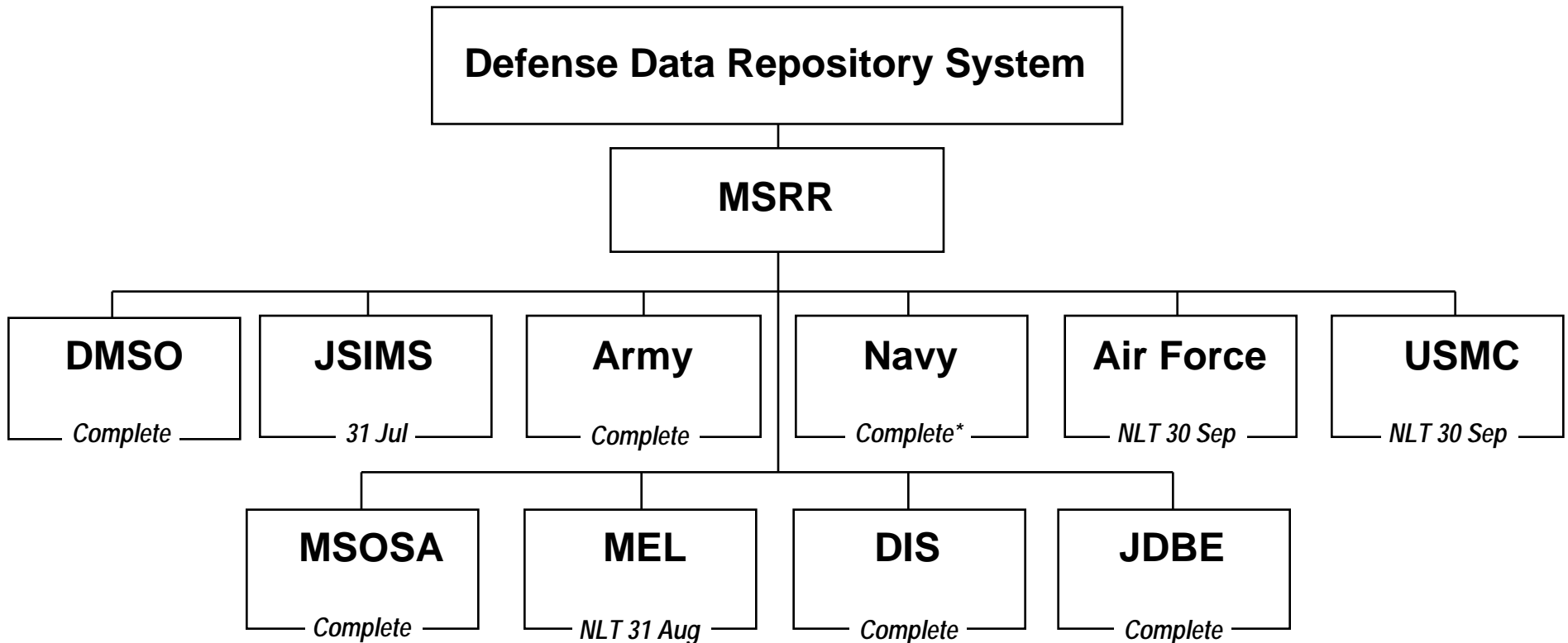
- **MSRR links to non MSRR resources and MSRR resources maintained by owners who:**
  - **Provide/update resources under configuration control**
  - **Provide/update documentation**
  - **Provide/update quality criteria**
  - **Provide/update release and legal instructions**
  - **Provide/update security instructions**
  - **Provide distribution options**
  - **Distribute resources to consumers**



# MSRR Node Status

(End of FY96 Snapshot)

**DMSO**



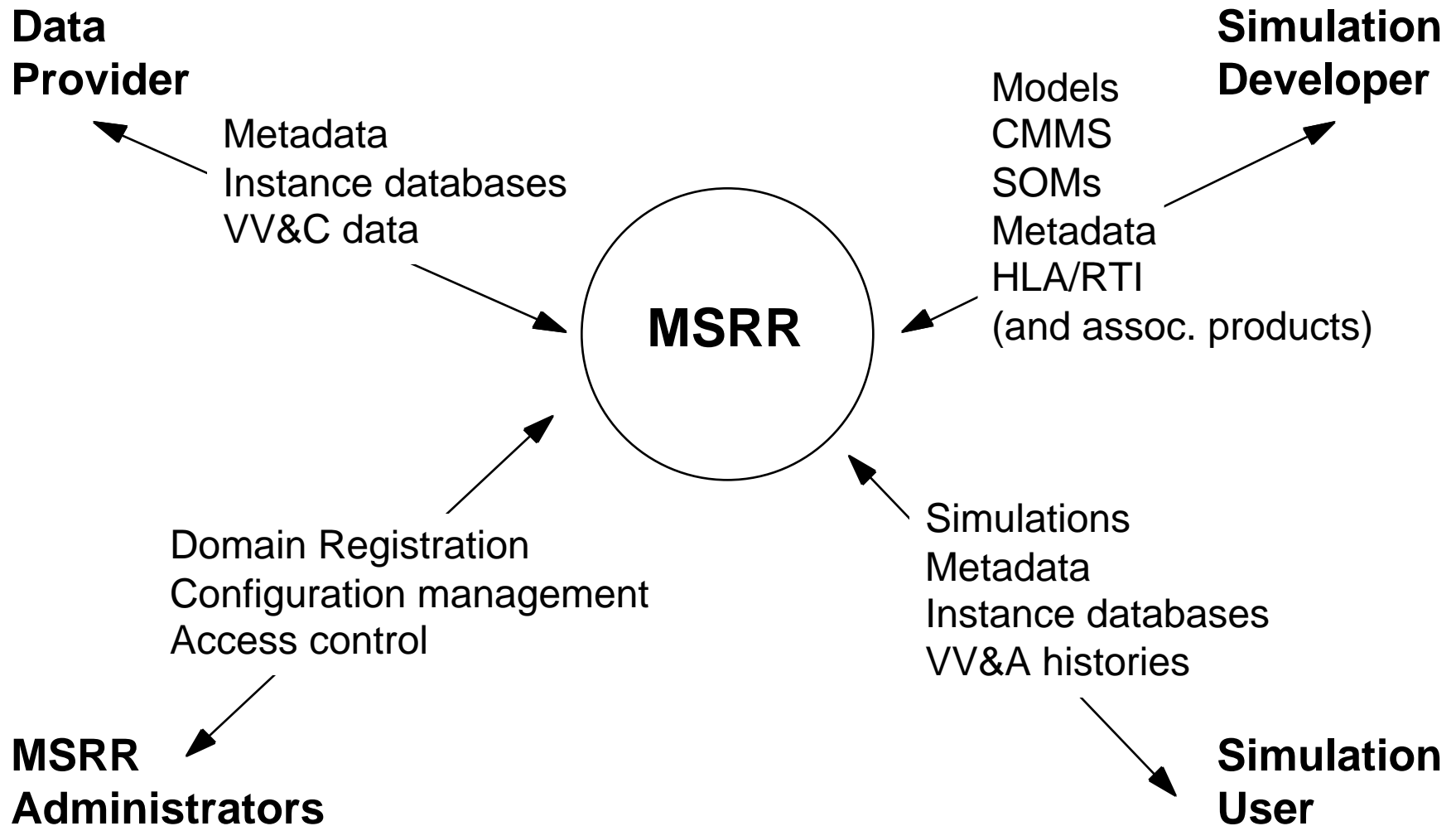
**Initial build of MSRR specific software will be on line 30 Sep 96**

*\*\*Except for the classified node*



**DMSO**

# MSRR Functionality







# **MSRR Service Infrastructure**

**The MSRR provides the following services**

- Registration**
  - **Users (Owners and Consumers)**
  - **M&S Resources**
- Help Desk**
  - **Support personnel**
  - **FAQs**
  - **News groups**
- “Virtual Card Catalog”**
  - **Identification and location**
  - **Using search engines and registrar database queries**
- Registered Resource Requests**
  - **Standard and customized resource ordering**
  - **From sources such as MEL, ADRS, FOM library**

*continued*



# **MSRR Service Infrastructure**

- **Documentation**
  - **Operations Guide with appendices which include:**
    - Node Administrator's Guide
    - IDC Guide
    - Node Installation procedures
    - Registrar Procedures
    - Style Guide
  - **User's Guide with appendices which include guidelines for:**
    - Registration
    - Security & Releasibility
    - Quality Criteria
  - **Configuration Management Plan**
- **Training**
  - **Node Installation**
  - **Node Administration**
  - **Information Domain Analysis & Organization**
  - **Configuration Management**

*continued*

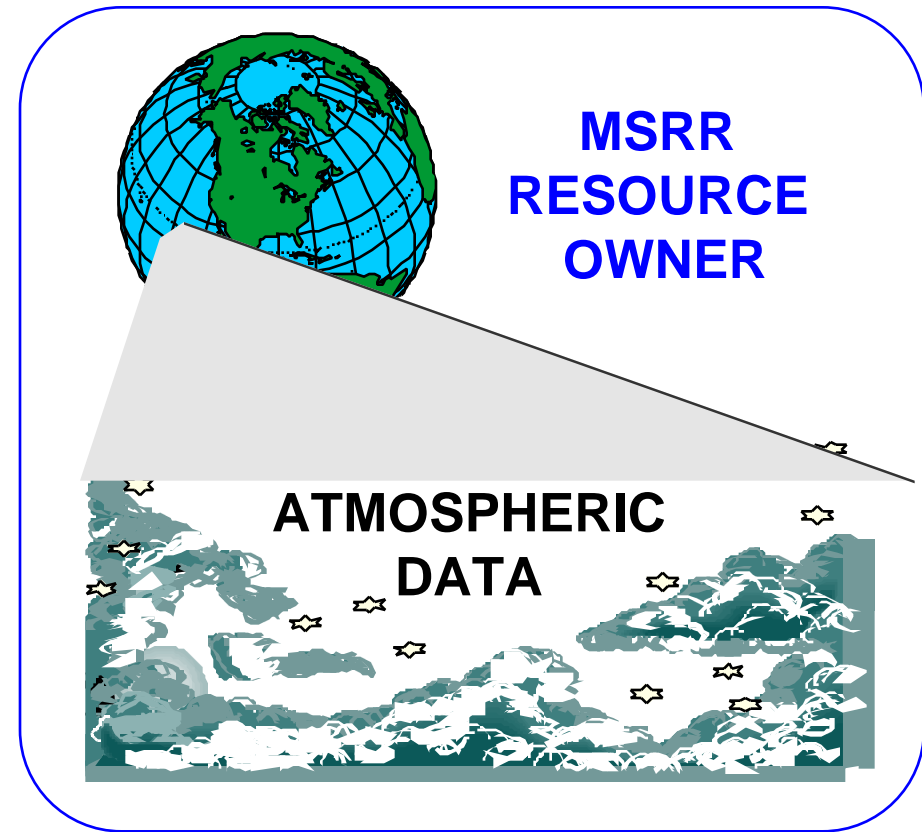


DMSO

# MSRR Service Infrastructure

- Visualization
  - Browsers
  - Viewers
  - Data reformatters
  - Graphical interfaces

MSRR USER





# MSRR Registration

**The MSRR provides centralized registration for**

- Users (resource providers)**
- Resources (libraries, directories/catalogues, models, simulations, data, metadata, algorithms, tools, and subject matter experts)**
  - **URLs**
  - **CM tags**
  - **MIME/resource types/viewers**
  - **Release criteria**
  - **Security restriction**
- Users (resource consumers), consumer groups, and passwords**
- Information Domains and associated taxonomies**
- Nodes and administrators**



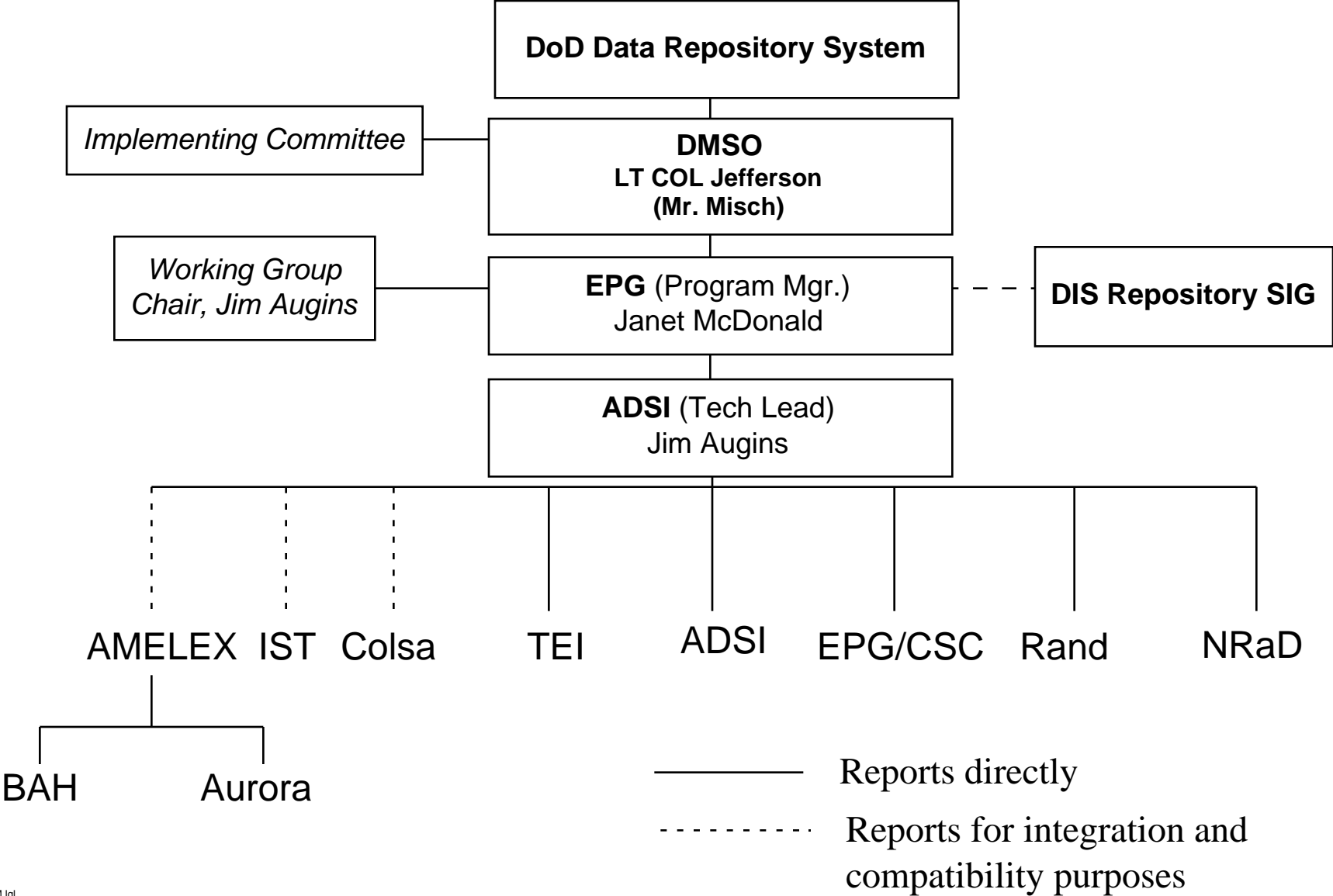
# **MSRR Registration Functions**

**The MSRR provides the following registration functions**

- **Enforce resource provider release restrictions**
- **Authenticate and authorize users and their passwords**
- **Update the M&S taxonomy**
- **Maintain administrative records**
- **Check-in/out selected resources**
- **Track resource orders**
- **Compile usage statistics**
- **Generate reports**



# MSRR Management Organization





# MSRR Strategy

- **Unclassified nodes**
  - **Services (4)**
    - **Army installation complete - on line registered 30 May**
    - **Air Force (30 Sep)**
    - **Marines (30 Sep)**
    - **Navy will use existing unclas infrastructure**
  - **JSIMS (31 Jul)**
  - **DMSO (available now)**
  - **JDBE (available now)**
  - **MSOSA (available now)**
  - **DIS (available now)**
  - **MEL (31 Aug)**

*continued*



# **CMSRR Strategy**

## **Classified Nodes**

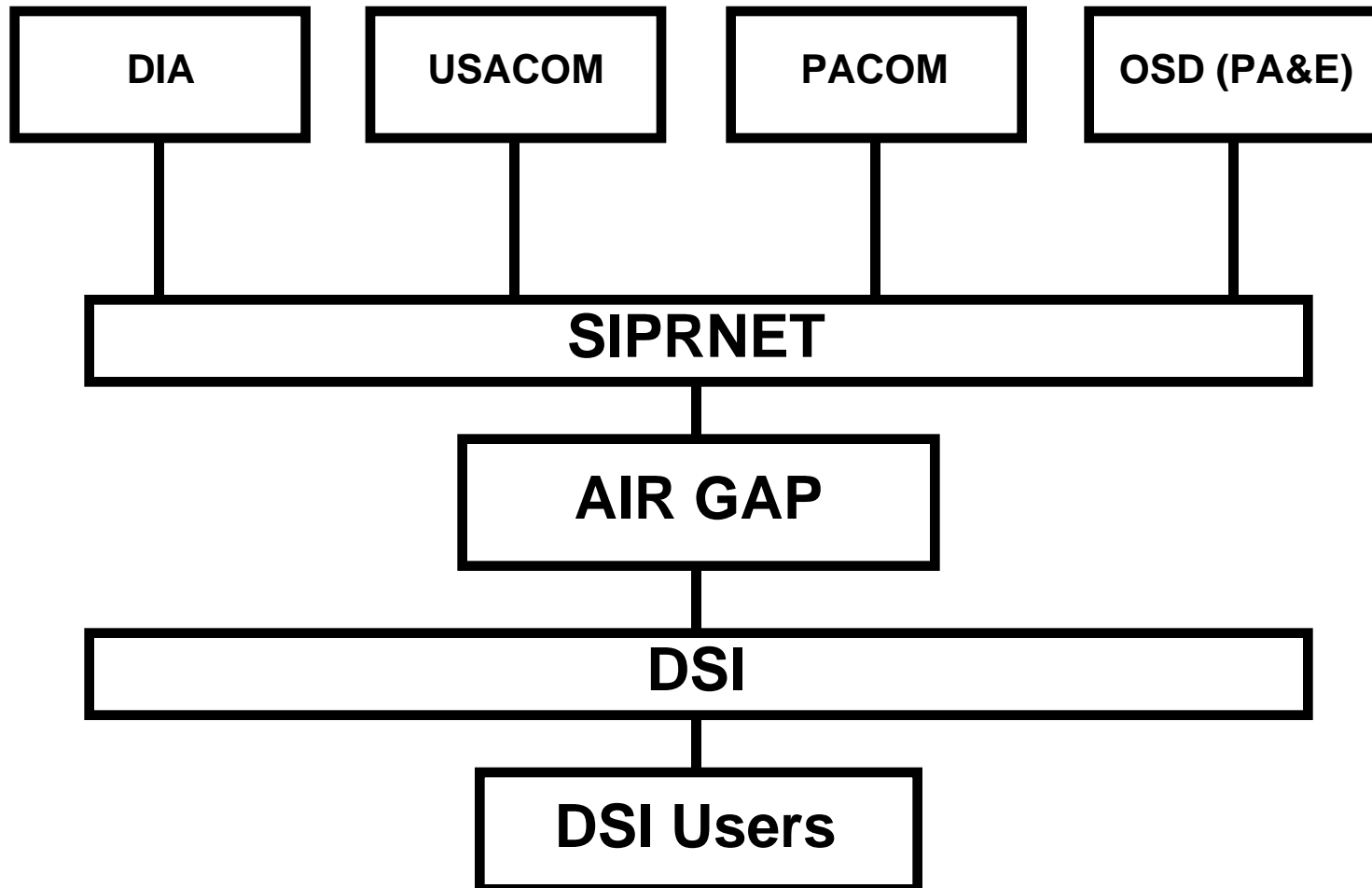
- Working toward an initial implementation NLT Jan 97
  - ♦ NRaD/EPG development Node Sites
  - ♦ Phase one DBs identified
    - ▣ USACOM, PACOM, OSD (PA&E), DIA
  - ♦ MEL (possible)
- Initial Architecture Design being Worked
  - ♦ SIPRNET based for phase one
  - ♦ Initial DSI connectivity in phase one (Air Gap)
- DB accessibility via translators as opposed to “mediation” technologies
  - ♦ Immature status; consider later as technology is proven





**DMSO**

# Phase One CMSRR



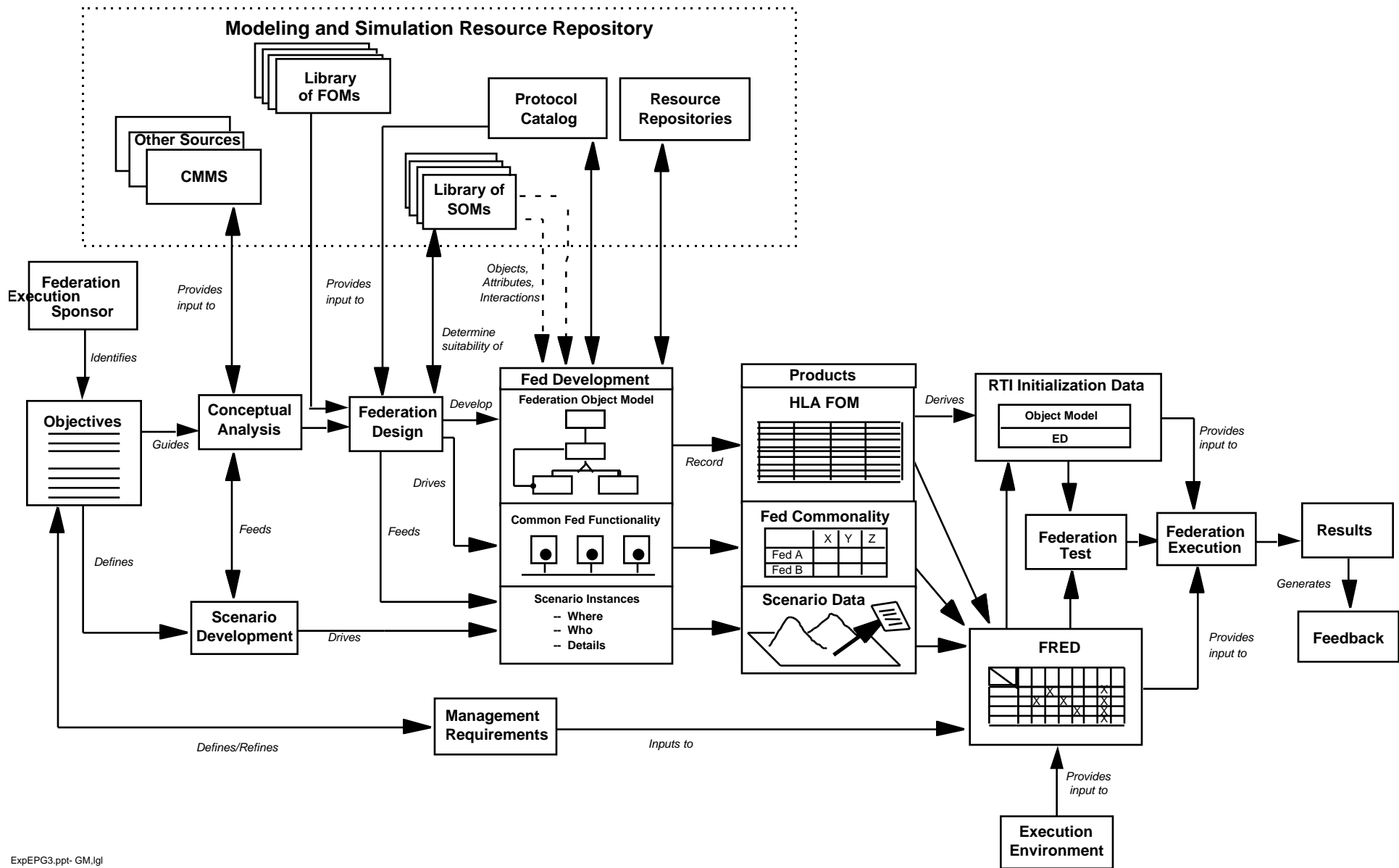


# Summary

- **MSRR leverages existing physical assets**
- **MSRR adds a complete infrastructure of services**
- **Will provide the user with enhanced ability to locate and use quality data and other products**



# Example Use Case





**DMSO**

# Backup Slides



# User Registration

- **User Registration**
  - **Initial: Simple password and basic access to the MSRR**
    - Registration database, announcements, newsgroups, etc.
    - Access privileges to specific, restricted items, controlled at the server where the items are hosted
  - **Projected: Basic access, plus -**
    - Cross MSRR access adjudicated via the registration database
    - Updated via info domain coordinator and registrar software



# Initial Domain Registration

- **Information domain coordinator is appointed**
- **Conducts domain analysis**
  - Standard methodology
  - Standard tool (COTS - identification pending)
- **Builds a conceptual model (product nr. 1)**
  - Taxonomy (MSRR provides baseline)
  - Entity relationships
- **Identifies physical resources related to the domain**
  - Reviews resources for quality profile
    - MSRR wide profile
    - Domain specific profile
  - Mapped to authoritative data sources (registered)

*continued*



## **Initial Domain Registration (cont'd)**

*continued*

- **Maps physical resources into conceptual model (product nr. 2)**
- **Maps physical resources to URLs (product nr. 3)**
- **Transmits products to the MSRR registrar**
- **Registrar registers new domain**
  - **Modifies registration database**
    - **Standard methodology and tools promote rapid migration of IDC product(s) into MSRR database(s)**
  - **Tests links**
  - **Advertises new domain**



## **Item/Resource Registration (owner)**

- **Accesses registration form on MSRR home page**
- **Requests registration of resource, to registrar, via form driven questionnaire**
  - **Identifies resource (standard taxonomy available)**
  - **Nominates to one or more domains**
  - **Specifies quality profile**
    - **General**
    - **Domain specific may require follow up depending on domain assignment**
  - **Provides physical location and URL**
  - **Specifies access restrictions**





**DMSO**

## **Item/Resource Registration (registrar)**

- **Verifies MSRR quality profile**
- **Verifies ADS relationship**
- **Nominates to appropriate domain coordinator(s)**



**DMSO**

## **Item/Resource Registration (IDC)**

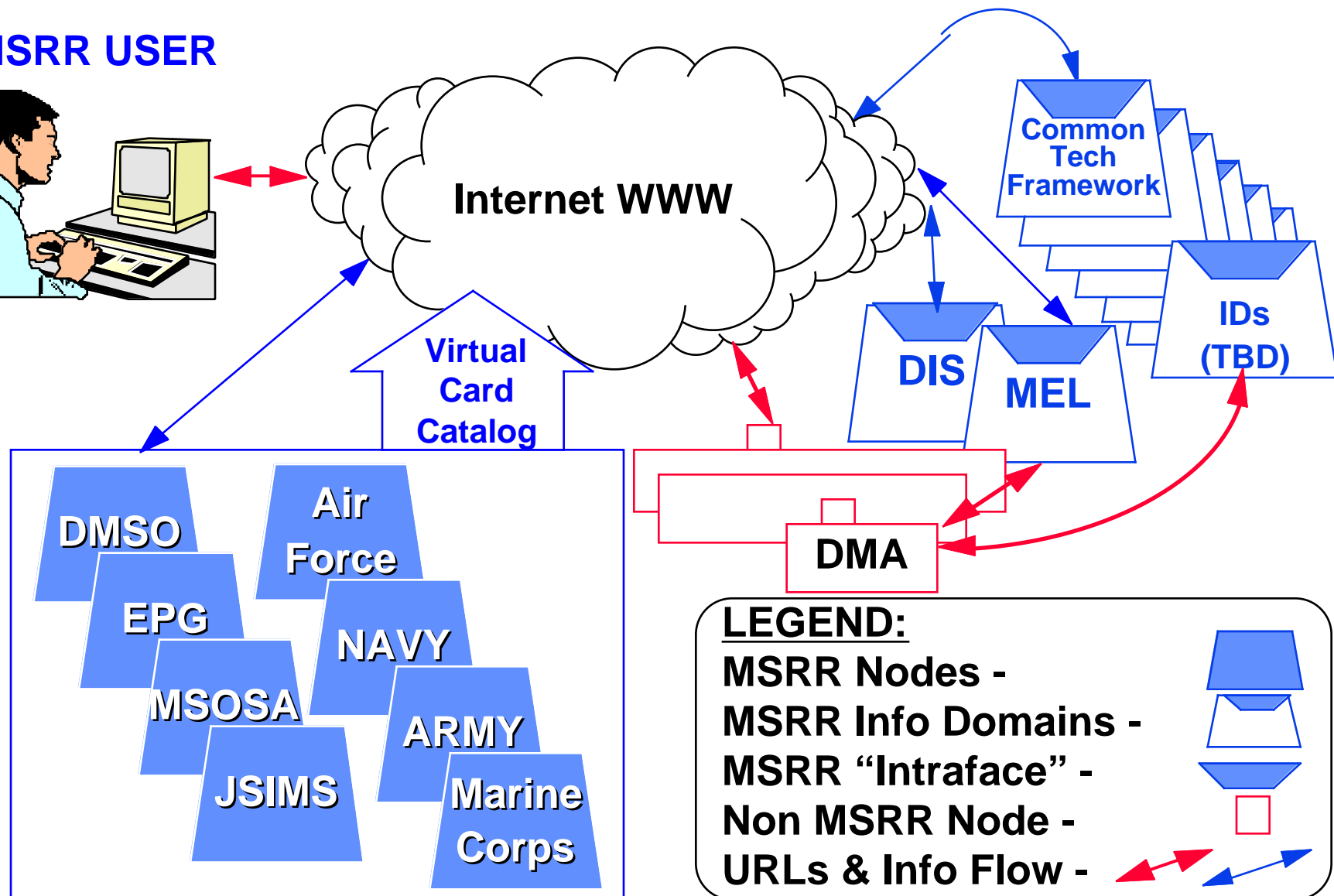
- **Receives nominations from registrar**
- **Verifies domain specific quality profile**
- **Maps physical resources into conceptual model (product nr. 2)**
- **Maps physical resources to URLs (product nr. 3)**
- **Transmits products to the MSRR registrar**



# Distributed Network of Information Resources

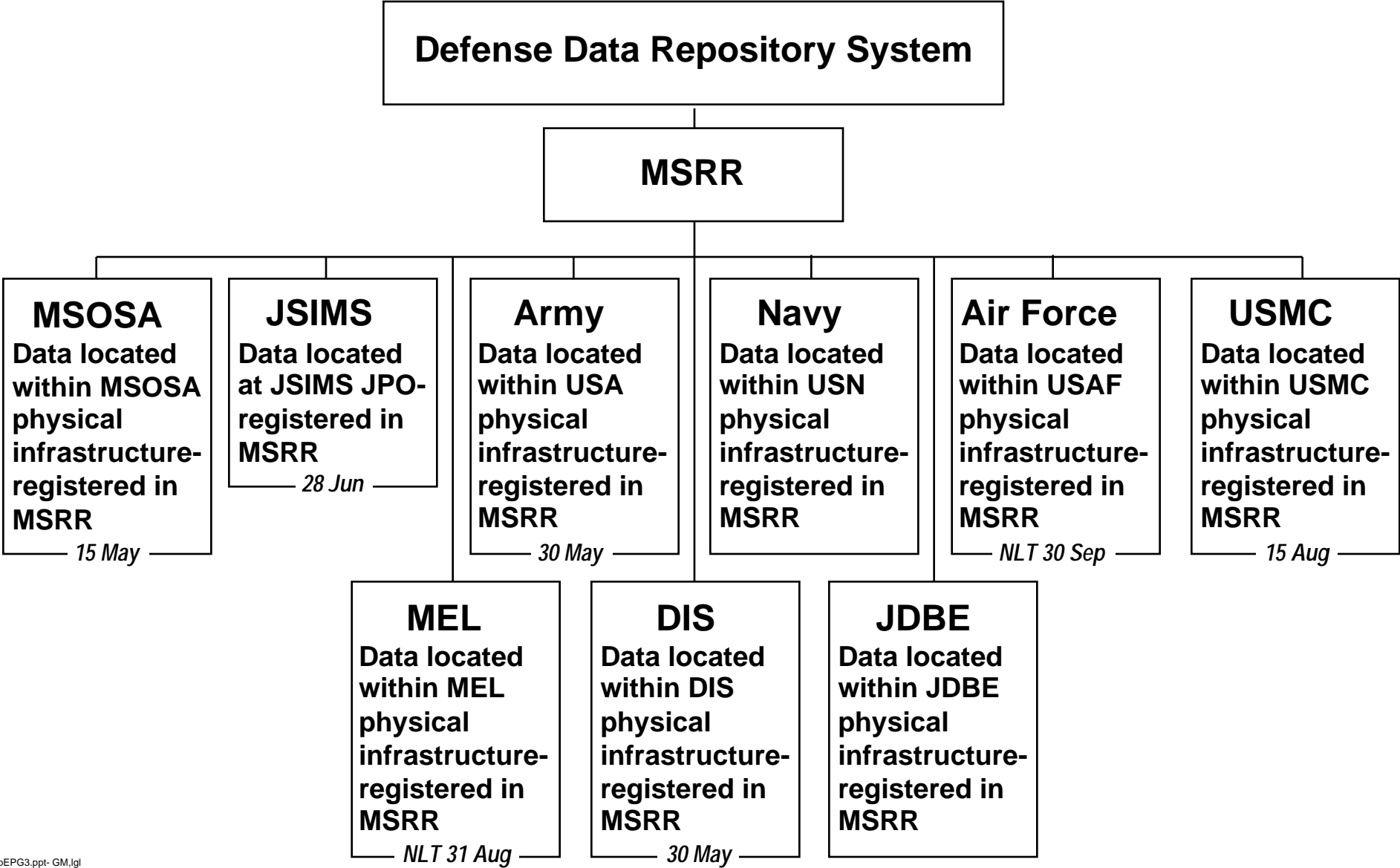
DMSO

MSRR USER





# MSRR End of FY96 Snapshot





# M&S Directories

- **Originated as a DoD wide catalog of models and simulations**
- **Based on a data model currently maintained for the M&S FDAd**
- **Desire is for a DoD wide, distributed M&S catalog, maintained by model sponsors**